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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,808	07/14/2003	Bing Zhou	15913.39.1	5792

22913 7590 06/29/2005

WORKMAN NYDEGGER  
(F/K/A WORKMAN NYDEGGER & SEELEY)  
60 EAST SOUTH TEMPLE  
1000 EAGLE GATE TOWER  
SALT LAKE CITY, UT 84111

EXAMINER

LANGEL, WAYNE A

ART UNIT	PAPER NUMBER
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1754

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.



UNITED STATES DEPARTMENT OF COMMERCE  
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SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKETT NO.
10/618808	7-14-03	Zhou	15913.39.1

EXAMINER	
W. Lange	
ART UNIT	PAPER NUMBER
1754	—

DATE MAILED:

### EXAMINER INTERVIEW SUMMARY RECORD

All participants (applicant, applicant's representative, PTO personnel):

(1) Mr. Guyon (3) \_\_\_\_\_  
(2) Examiner Lange (4) \_\_\_\_\_  
Date of interview 6-6-05

Type: ☐ Telephonic ☐ Personal (copy is given to ☐ applicant ☒ applicant's representative).

Exhibit shown or demonstration conducted: ☐ Yes ☒ No. If yes, brief description: \_\_\_\_\_

Agreement ☐ was reached with respect to some or all of the claims in question. ☒ was not reached.

Claims discussed: 1-36

Identification of prior art discussed: as cited in last office Action

Description of the general nature of what was agreed to if an agreement was reached, or any other comments: Mr. Guyon proposed amendments, as attached hereto, and argued why these claims would distinguish over Zhou et al '775 and Zhou et al '66. Mr. Guyon also stated that he will submit two IDS documents, and as well as a document showing that carbon black is <sup>initially</sup> inherently hydrophobic. (cont enpg 2)

(A fuller description, if necessary, and a copy of the amendments, if available, which the examiner agreed would render the claims allowable must be attached. Also, where no copy of the amendments which would render the claims allowable is available, a summary thereof must be attached.)

☐ 1. It is not necessary for applicant to provide a separate record of the substance of the interview.

Unless the paragraph below has been checked to indicate to the contrary, A FORMAL WRITTEN RESPONSE TO THE LAST OFFICE ACTION IS NOT WAIVED AND MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW (e.g., items 1-7 on the reverse side of this form). If a response to the last Office action has already been filed, then applicant is given one month from this interview date to provide a statement of the substance of the interview.

☐ 2. Since the examiner's interview summary above (including any attachments) reflects a complete response to each of the objections, rejections and requirements that may be present in the last Office action, and since the claims are now allowable, this completed form is considered to fulfill the response requirements of the last Office action. Applicant is not relieved from providing a separate record of the substance of the interview unless box 1 above is also checked.

page 1 of 3

W. Lange  
Examiner's Signature



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SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
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10/6/8808

75913, 39,1

EXAMINER
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W. Langel

ART UNIT	PAPER NUMBER
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DATE MAILED:

### EXAMINER INTERVIEW SUMMARY RECORD

All participants (applicant, applicant's representative, PTO personnel):

(1) \_\_\_\_\_ (3) \_\_\_\_\_

(2) \_\_\_\_\_ (4) \_\_\_\_\_

Date of interview \_\_\_\_\_

Type: ☐ Telephonic ☐ Personal (copy is given to ☐ applicant ☐ applicant's representative).

Exhibit shown or demonstration conducted: ☐ Yes ☐ No. If yes, brief description: \_\_\_\_\_

Agreement ☐ was reached with respect to some or all of the claims in question. ☐ was not reached.

Claims discussed: \_\_\_\_\_

Identification of prior art discussed: \_\_\_\_\_

Description of the general nature of what was agreed to if an agreement was reached, or any other comments: *(cont. from page 1)*

*The examiner agreed that Zhou et al '775 and Zhou et al '861 do not appear to disclose or suggest that at least about 50% of the anchoring material is straight-chained instead of branched, or that the support material and anchoring material form (cont. on p. 3)*

(A fuller description, if necessary, and a copy of the amendments, if available, which the examiner agreed would render the claims allowable must be attached. Also, where no copy of the amendments which would render the claims allowable is available, a summary thereof must be attached.)

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*page 2 of 3*

Examiner's Signature

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SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
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10/68808

05913.39.1

EXAMINER	
W. Lange	
ART UNIT	PAPER NUMBER

DATE MAILED:

### EXAMINER INTERVIEW SUMMARY RECORD

All participants (applicant, applicant's representative, PTO personnel):

(1) \_\_\_\_\_ (3) \_\_\_\_\_

(2) \_\_\_\_\_ (4) \_\_\_\_\_

Date of interview \_\_\_\_\_

Type: ☐ Telephonic ☐ Personal (copy is given to ☐ applicant ☐ applicant's representative).

Exhibit shown or demonstration conducted: ☐ Yes ☐ No. If yes, brief description: \_\_\_\_\_

Agreement ☐ was reached with respect to some or all of the claims in question. ☐ was not reached.

Claims discussed: \_\_\_\_\_

Identification of prior art discussed: \_\_\_\_\_

Description of the general nature of what was agreed to if an agreement was reached, or any other comments: *(Cont. from page 2)*

*a condensation reaction product of corresponding functional groups of the support material and anchoring material.*

(A fuller description, if necessary, and a copy of the amendments, if available, which the examiner agreed would render the claims allowable must be attached. Also, where no copy of the amendments which would render the claims allowable is available, a summary thereof must be attached.)

☐ 1. It is not necessary for applicant to provide a separate record of the substance of the interview.

Unless the paragraph below has been checked to indicate to the contrary, A FORMAL WRITTEN RESPONSE TO THE LAST OFFICE ACTION IS NOT WAIVED AND MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW (e.g., items 1-7 on the reverse side of this form). If a response to the last Office action has already been filed, then applicant is given one month from this interview date to provide a statement of the substance of the interview.

☐ 2. Since the examiner's interview summary above (including any attachments) reflects a complete response to each of the objections, rejections and requirements that may be present in the last Office action, and since the claims are now allowable, this completed form is considered to fulfill the response requirements of the last Office action. Applicant is not relieved from providing a separate record of the substance of the interview unless box 1 above is also checked.

Proposed Claim Amendments

1. **(Proposed Amendment)** A supported reactive catalyst having a controlled coordination structure, comprising:

a support material;

a plurality of reactive catalyst particles disposed on the support material, the reactive catalyst particles comprising a plurality of catalytically reactive atoms including at least one member selected from the group ~~comprising~~ consisting of noble metals, base transition metals, rare earth metals, and solid non-metals,

the catalytically reactive atoms being arranged so that at least about 50% of a top or outer surface layer of the catalytically reactive atoms have a nearest neighbor coordination number of 2;

an anchoring material comprising at least one type of polymer, oligomer or organic compound that chemically binds at least a portion of the reactive catalyst particles to the support material, at least a portion of the anchoring material being disposed between a bottom layer of the catalytically reactive atoms and the support material,

wherein at least about 50% of the anchoring material is straight-chained instead of branched.

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1B. *(Alternative Amendment)* A supported reactive catalyst having a controlled coordination structure, comprising:

a support material;

a plurality of reactive catalyst particles disposed on the support material, the reactive catalyst particles comprising a plurality of catalytically reactive atoms including at least one member selected from the group ~~comprising~~ consisting of noble metals, base transition metals, rare earth metals, and solid non-metals,

the catalytically reactive atoms being arranged so that at least about 50% of a top or outer surface layer of the catalytically reactive atoms have a nearest neighbor coordination number of 2;

an anchoring material comprising at least one type of polymer, oligomer or organic compound that chemically binds at least a portion of the reactive catalyst particles to the support material, at least a portion of the anchoring material being disposed between a bottom layer of the catalytically reactive atoms and the support material,

wherein the support material and the anchoring material comprise corresponding functional groups that have been reacted together to form a chemical bond between the support material and the anchoring material,

wherein the chemical bond between the support material and the anchoring material is a condensation reaction product of the corresponding functional groups of the support material and the anchoring material.

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31. **(Proposed Amendment)** A supported reactive catalyst having a controlled coordination structure, comprising:

a support material;

a plurality of reactive catalyst particles disposed on the support material, the reactive catalyst particles comprising a plurality of catalytically reactive atoms including at least one member selected from the group ~~comprising~~ consisting of base transition metals, rare earth metals, and solid non-metals,

the catalytically reactive atoms being arranged so that at least about 50% of a top or outer surface layer of the catalytically reactive atoms have a nearest neighbor coordination number of 2;

an anchoring material comprising at least one type of polymer, oligomer or organic compound that chemically binds at least a portion of the reactive catalyst particles to the support material, at least a portion of the anchoring material being disposed between a bottom layer of the catalytically reactive atoms and the support material.